



## **MOLD AND MOISTURE PROTOCOL CHECKLIST**

August 21, 1998 (8/25/98), (8/26/98), (3/31/99)

### **Visit Four**

#### **Education**

- ☐ Excessive moisture (humidity) can cause problems for children with asthma by helping molds, mites and cockroaches grow.
- ☐ At our next visit, we will discuss more about how moisture affects asthma, help you check for conditions in the house that add excessive moisture, and talk about ways to reduce moisture.
- ☐ To prepare for this visit, I'd like to make some moisture measurements now and also show you how you can do this yourself. I'll leave the machine that measures moisture with you until the next visit and a sheet on which you can write down the highest and lowest moisture readings for each day. These measurements will help us figure out if there is a moisture problem in the house and what to do about it.

#### **Assessment**

- ☐ Measure temperature and RH in common room by turning on RH meter and leaving it on for 20 minutes. Record temperature and maximum RH.
- ☐ Measure temperature and RH in child's sleeping area for 20 minutes and record.
- ☐ **Show parent how to measure and record minimum and maximum RH in their notebook and explain use of daily readings.**

### **Visit Five: General Mold & Moisture Education (all homes)**

#### **Assessment**

First, complete the inspection items described below. This will give a water damage score and a mold score. Then, compute the moisture score (see attached score sheet) using the inspection results, the information recorded in the RH log, and the skin test results.

#### **Basic Moisture Inspection Checklist**

<b>Room/Site</b>	<b>Water Damage Score</b>	<b>Mold Score</b>
Exterior	<input type="checkbox"/> 1. Roof is at end of useful life, shingles damaged or missing or evidence of roof leaks <input type="checkbox"/> 2. Siding is wet, rotting, damaged or missing	
Crawl Space		

Basement	<input type="checkbox"/> 4. Water penetrating through walls or floor <input type="checkbox"/> 5. Wet or rotting drywall, wood or other material on walls/ceiling	<input type="checkbox"/> 1. Moldy smell <input type="checkbox"/> 2. Visible mold on window frames <input type="checkbox"/> 3. Visible mold on walls <input type="checkbox"/> 4. Visible mold on ceilings
Child's sleeping area	<input type="checkbox"/> 6. Flooring or wood finishes buckling; <input type="checkbox"/> 7. Discolored, stained, peeling or otherwise water-damaged paint or plaster on walls OR wall paper lifting up <input type="checkbox"/> 8. Rust on metal surfaces <input type="checkbox"/> 9. Window frame rotting	<input type="checkbox"/> 5. Visible mold on window frames <input type="checkbox"/> 6. Visible mold on walls <input type="checkbox"/> 7. Visible mold on ceilings <input type="checkbox"/> 8. Visible mold on clothing, shoes, upholstery, mattress, etc. <input type="checkbox"/> 9. Moldy smell
Bathroom	<input type="checkbox"/> 10. Flooring or wood finishes buckling; <input type="checkbox"/> 11. Discolored, stained, peeling or otherwise water-damaged paint or plaster on walls OR wall paper lifting up <input type="checkbox"/> 12. Rust on metal surfaces <input type="checkbox"/> 13. Window frame rotting	<input type="checkbox"/> 10. Visible mold on window frames <input type="checkbox"/> 11. Visible mold on walls <input type="checkbox"/> 12. Visible mold on ceilings <input type="checkbox"/> 13. Visible mold on clothing, shoes, upholstery, mattress, etc. <input type="checkbox"/> 14. Moldy smell
Kitchen	<input type="checkbox"/> 14. Flooring or wood finishes buckling; <input type="checkbox"/> 15. Discolored, stained, peeling or otherwise water-damaged paint or plaster on walls OR wall paper lifting up <input type="checkbox"/> 16. Rust on metal surfaces <input type="checkbox"/> 17. Window frame rotting	<input type="checkbox"/> 15. Visible mold on window frames <input type="checkbox"/> 16. Visible mold on walls <input type="checkbox"/> 17. Visible mold on ceilings <input type="checkbox"/> 18. Visible mold on clothing, shoes, upholstery, mattress, etc. <input type="checkbox"/> 19. Moldy smell
Room where child spends most of waking hours (family room, living room, etc.)	<input type="checkbox"/> 18. Flooring or wood finishes buckling; <input type="checkbox"/> 19. Discolored, stained, peeling or otherwise water-damaged paint or plaster on walls OR wall paper lifting up <input type="checkbox"/> 20. Rust on metal surfaces <input type="checkbox"/> 21. Window frame rotting	<input type="checkbox"/> 20. Visible mold on window frames <input type="checkbox"/> 21. Visible mold on walls <input type="checkbox"/> 22. Visible mold on ceilings <input type="checkbox"/> 23. Visible mold on clothing, shoes, upholstery, mattress, etc. <input type="checkbox"/> 24. Moldy smell
Total score: count number of boxes checked		

## Education

The following messages are for all homes:

- ☐ **Exposure to some molds (fungus or mildew) causes asthma and can trigger asthma attacks.**
- ☐ **Mold particles which are stirred into the air and breathed in can trigger asthma, especially in people who are allergic to molds.**
- ☐ **Like dust mites, molds require moisture to grow.**
- ☐ **Condensation on window glass, leaking pipes , bathrooms (showers) and kitchens without adequate ventilation, are all common sources of moisture in homes.**
- ☐ Mold spores which allow mold to spread are found in dust so that reducing moisture and dust can reduce the level of allergens in the air from mold.
- ☐ **Cleaning methods: removing mold and mildew**  
Cleanable surfaces with mold growth should be washed with a detergent bleach solution using one tablespoon of detergent and one cup of household bleach per gallon of water. Wear gloves when cleaning. Cleaning bathroom and other surfaces at risk for mold growth (e.g. where mold has been observed previously, or which are damp) weekly can prevent mold problems from developing.

For homes with high moisture scores, add:

- ☐ The results of our moisture assessment suggest that your home may benefit from reducing the moisture level.
- ☐ At our next visit, we can talk more about how to do this.

## Supplies:

- ☐ RH meter and log: ask household to continue to record RH
- ☐ Basic Moisture Inspection checklist
- ☐ Moisture Score Worksheet



## Referrals:

- ☐ For severe mold and/or deteriorating asbestos refer to Industrial Hygienist

## Visit Six: Additional Interventions for High-Moisture Homes

A home will be considered high moisture after review of assessment findings from Visit 5 are reviewed with Tim Takaro. In the future, we will decide what moisture score from Visit 4 qualifies a home as high moisture.

During this visit, the CHES will collect additional information to help in controlling excessive moisture. From the information that has been collected during this visit and the prior visit, the CHES will make specific recommendations on how to reduce moisture

levels. Many of these can be carried out by the tenants with assistance from the CHES. If the source or reason for mold growth cannot be determined, the CHES can use advisory experts to either help interpret the information gathered or determine what further information is needed. In difficult situations the CHES can bring an expert on site if this seems appropriate.

**Assessment:** additional items to complete basic assessment done during last visit

Instructions: CHES checks off on list below any problems found as home is inspected. Enter findings into CHES tracking system as new problems. Then return copy of this list to Health Department for research use.

**High Moisture Home Inspection Checklist**

Room/Site	Water Damage Score	Mold Score
Exterior	<input type="checkbox"/> Gutters missing, leaking or clogged <input type="checkbox"/> Downspouts missing, leaking or disconnected <input type="checkbox"/> Standing water at perimeter of house - storm drain or foundation drain clogged or missing <input type="checkbox"/> Splash pads slope toward house or are missing <input type="checkbox"/> Site grading flat or slopes toward house <input type="checkbox"/> Exterior wood in contact with earth <input type="checkbox"/> Excess water at foundation wall from leaking hose bib <input type="checkbox"/> Caulking cracked or missing at exterior door, window or other trim	
Crawl Space	<input type="checkbox"/> Standing water under house - storm drain or foundation drain clogged or missing <input type="checkbox"/> Ground cover missing, damaged or incomplete, soil against wood and uncovered soil <input type="checkbox"/> Visible mold growing on ground, bottom of floor or on floor joists	
Basement	<input type="checkbox"/> Carpet on unsealed basement floor <input type="checkbox"/> Crumbling of concrete or masonry surfaces <input type="checkbox"/> History of flooding noted by tenants	<input type="checkbox"/> 1. Moldy smell <input type="checkbox"/> 2. Visible mold on window frames <input type="checkbox"/> 3. Visible mold on walls <input type="checkbox"/> 4. Visible mold on ceilings
Attic	<input type="checkbox"/> Water or staining on underside of roof deck indicating roof leak <input type="checkbox"/> Wet or rotting construction materials in attic <input type="checkbox"/> Visible mold on attic surfaces <input type="checkbox"/> Air leakage between attic and house interior through open wall cavities, chases or voids around chimneys	<input type="checkbox"/> 1. Moldy smell <input type="checkbox"/> 2. Visible mold on window frames <input type="checkbox"/> 3. Visible mold on walls <input type="checkbox"/> 4. Visible mold on ceilings

Interior	<input type="checkbox"/> Moldy smell or visible mold in duct system <input type="checkbox"/> Leaks at plumbing supply lines or drains <input type="checkbox"/> One or more rooms with no heat and closed off from house <input type="checkbox"/> Presence of open aquariums, stored firewood or excessive house plants <input type="checkbox"/> Humidifier used in any room <input type="checkbox"/> Dryer not ducted to outside, disconnected or with "energy saving" diverter.	<input type="checkbox"/> 1. Moldy smell <input type="checkbox"/> 2. Visible mold on window frames <input type="checkbox"/> 3. Visible mold on walls <input type="checkbox"/> 4. Visible mold on ceilings
Total score: count number of boxes checked		

### Education

- ☐ Review problem areas where moisture is entering home, such as roof leaks and faulty plumbing, or bare soil in crawl space.

Make a list of interventions with the parent which reduce sources of moisture. Let the parent prioritize what they want to work on first based upon ease, economics (and ability to coordinate with landlord, if applicable). The following are some examples:

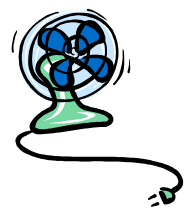
- All moldy and water damaged materials must be removed from the home especially carpeting and fabric furnishings.
- If carpet on concrete can't be removed, place vapor barrier between carpet and concrete.
- In cases where bedrooms of an asthmatic can not be adequately mitigated for mold growth and aerosols, the continuous use of a room air filter (HEPA) is recommended.
- Ventilation of bathrooms and other high moisture rooms is needed. At a minimum windows should be opened when in use. If possible, mechanical ventilation should be installed in bathrooms and kitchens without fans. If possible, the fan should have a RH rheostat switch or timer to assure either continuous low flow or timed use that allows complete air exchange when needed.
- Ventilate crawl space and plug holes between crawl space and home (use steel wool and Easyfoam)

- ☐ Cleanable surfaces with mold growth should be washed with a detergent bleach solution using one tablespoon of detergent and one cup of household bleach per gallon of water.

Heat rooms which create "moisture sinks". Try to keep all rooms within 2-3 degrees of each other.

Use available ventilation, such as fans and opening windows, especially when cooking, showering or doing laundry.

Open windows at least once per day to ventilate home.



Remove or thoroughly dry and vacuum weekly any carpeting.  
Discontinue use of humidifiers especially in child's room.

**Supplies:**

- ☐ RH meter and log: ask household to continue to record RH to see if actions result in improved RH.
- ☐ High Moisture Home Inspection Checklist

**Referrals:**

- ☐ Industrial hygienist as indicated

## MOISTURE SCORE WORKSHEET

1. Must have skin sensitization to at least one mold or to dust mites:

- ☐ sensitive to mold  
☐ sensitive to mites

NOTE: if skin test results are not available, assume child is sensitive to mites but not molds and check box above for mites only.

2. Tenants must be interested in making changes to address their moisture problem (e.g. willing to discuss with landlord any structural changes needed)

- ☐ interested in addressing moisture

3. Compute a moisture score for the home:

\* If skin sensitized to mold: score two points for each site on inspection checklist with *visible mold* (e.g. bathroom window). If not skin sensitized to mold, score one.

\* Score 1 point for *each* site with visible *moisture damage* found during assessment

\* Score for *average* of the five highest daily RH maximums recorded in client's log (or, if client didn't keep a log, use highest RH measured in home during prior visit):

- ☐ Record five highest values here: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- ☐ Add up the five values here: \_\_\_\_\_ (sum)

- ☐ Divide the sum by five to get the average and use this number in the chart below to get the humidity (RH) score \_\_\_\_\_ (sum divided by 5)

- ☐ Also, record the lowest humidity noted in the log: \_\_\_\_\_

- ☐ Also, record the total number of humidity measurements in the log: \_\_\_\_\_
-

Average RH maximum	RH score
≤ 50%	0
51-55%	1
56-60%	2
61-65%	3
66-70%	5
71-75%	10
76-80%	15
81-85%	20
85-90%	25
91+ %	30

4. Compute sum score:

a. Mold score \_\_\_\_\_

b. Multiply number in (a) by 2 if skin test shows mold allergy OR by 1 if skin test does not show mold allergy or if no skin test available \_\_\_\_\_

c. Water damage score \_\_\_\_\_

d. RH score \_\_\_\_\_

e. **TOTAL moisture score: add (b) + (c) + (d)**

(note: score 0 if skin test shows NO sensitivity to mold or mites)

**REVIEW RESULTS OF MOISTURE ASSESSMENT WITH TIM TAKARO TO DETERMINE IF THE HOUSE IS A “HIGH-MOISTURE” HOUSE. If it is, begin the high moisture house protocol in visit 6.**